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ABSTRACT

This paper presents a series of studies related to the question of how children learn to evaluate themselves in achievement situations. The approach to the research is based on the Weiner et al attributional model of achievement. The paper describes three studies designed to determine the extent to which first, second and third grade children use outcome and norm cues to make judgments about ability, effort, and task difficulty attributions. The results of the 3 studies indicate clear developmental differences in the use of achievement-related information in making evaluative judgments. In addition, it appears that social norm information was not used predictably even by second and third graders, though outcome information was. Possible reasons for these developmental changes and their implications are discussed. (Author/JMB)

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Development of Achievement-Related Judgmental Processes

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ISSUES IN THE DEVELOPMENT OF SOCIAL

PERCEPTION AND JUDGMENT

Development of Achievement-Related Judgmental Processes

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Several social psychologists have recently described the importance of attributions as mediators for individual's responses to environmental events. In the area of achievement, Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum (1971) have modified the Atkinson model of achievement motivation to show how causal attributions of success and failure affect achievement-related behaviors. Research with adults has generally supported the hypothesized relationships among type of information (e.g., social norms), causal attributions (e.g., ability), and behavioral responses (e.g., level of affect). However, research in this area becomes more complicated when one is studying children. Unlike adults, children at various ages potentially differ greatly on both the cognitive capacities necessary for the demands of judgmental tasks and on the degree

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of experience with the achievement information involved.

This paper will present some research my colleagues and I have done on the developmental of achievement-related judgments. The initial question prompting this series of studies was concerned with how children learn to evaluate themselves in achievement situations. What is it that makes children at different ages feel "good" about succeeding and "bad" about failing? What information do they use in making these kinds of judgments?

The approach to the research described in this paper was based on the Weiner et al. attributional model of achievement. They suggest that an individual's level of affect (pride/shame) after a successful or unsuccessful task performance is related to attributions concerning the causes of the performance. Attributions to internal factors (ability or effort) are assumed to result in greater positive or negative affect than attributions to external factors (task difficulty or luck). One cue commonly used in making a causal attributions is social norms. When an individual's performance is consistent with the performance of others (e.g., I succeeded and everyone else succeeded), attributions should be to an external factor--task ease. Conversely, when the individual's performance is inconsistent with that of others (e.g., I succeeded and everybody else failed), attributions should be made to an internal factor--ability or effort. Empirical support for the existence of these relationships in adults is provided by Weiner and Kukla (1970).

In 1972, Jacque Parsons and I conducted a study to test developmentally these hypothesized relationships between Outcome cues, Social Norm Cues, and self-evaluation. Children at three age levels (6, 8, and 10 years) performed matching-familiar-figures tasks, on which they either succeeded or failed (outcome cue). They were also told that other children their age either succeeded or failed ([illegible] norm cue). The major dependent variable was level of positive or negative affect. It was predicted that level of affect would be related to social norm and outcome information as suggested by the Weiner et al. (1972) model, described earlier, and that there would be an increasing use of the information with age. (The developmental predictions were based on theoretical formulations by Inhelder and Piaget (1958) and by Veroff (1969)). The results showed that, as expected, there were main effects for Outcome ($p < .001$) and for Social Norms ($p < .05$). The children felt better after succeeding than after failing; and they felt more pride about success and less shame about failure when they were told that everyone else had failed. These effects can be seen in Figure 1.

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Insert Figure 1 about here.
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In terms of developmental findings, there was an Age X Outcome interaction ($p < .05$), which indicated that Outcome information had an increasing impact on self-evaluative ratings with age, but only for <u>failure</u> information (See Figure 1). There

was no age difference in level of affect after success. This finding is worth noting because it represents one of the major consistencies across the studies, and because it relates to recent findings in the moral judgment literature (Costanzo, Coie, Grumet, & Farnill, 1973) that age differences in the use of social cues varies as a function of the valence of the outcome information. The expected Age X Norm interaction was not significant, though analyses done within each age level indicated that the main effect for Norms was not significant for the 6 year olds. Thus, it was only the older two age groups that were using the norm information in a reasonably consistent way.

In general, the results of this study were basically consistent with the Weiner et al. model. Affect ratings were more extreme in a positive or negative direction when attributions should have been made to internal as opposed to external causes. There is a fundamental problem of interpretation, however. The mediating attributions were only assumed to be consistent with the model. We do not know for sure that, for example, own success coupled with successes by others resulted in an external task difficulty attribution. Without this information, it is difficult to fully understand the development of how the use of social norm and outcome information affects self-evaluation.

There are various reasons to suspect that young children may not use social norm and outcome information in the ways suggested above. First, Veroff (1969) has described two kinds

of achievement motivations: (1) autonomous, which is based on internalized standards, and (2) social, which concerns standards based on social comparison. He suggests the second type does not develop until the early school years. According to Veroff, a motive to socially compare develops only after "considerable reinforcement, usually from siblings or parents." Second, Piagetian theory and research has led to suggestions that young children may be limited in their abilities to process certain kinds and amounts of information. For example, a young child may be too "egocentric" to notice or care about the performance of anyone except him/herself (Veroff, 1969). Also, a young child's tendency to "center" on one cue may preclude his/her ability to integrate the social norm and outcome information in making judgments. Third, many young children may have little opportunity to socially compare until they enter school. It may not be until kindergarten or first grade forces them into competition that they begin to recognize that the performance of others affects how their own performance is evaluated.

Thus, three studies were initiated to attempt to replicate the above results and to determine to what extent children use outcome and norm cues to make judgments about ability, effort, and task difficulty attributions. The basic design of these three studies (as well as Parsons & Ruble (1972) described above) is very similar and is shown in Table 1. Basically, the independent variables are Age (2 or 3 levels), Norms or Task Ease (2 levels), and Outcome (2 levels). The basic dependent variables

are ratings of ability (e.g., How good are you at this task?), effort (e.g., How much did you try?), task difficulty (e.g., How hard was the task?), and usually affect (e.g., How good do you feel about how you did on the task?). Some of the major differentiating features of each study are also listed in Table 1. These include within vs. between subject design, whether subject rates self or another, age levels of the subjects, etc. Let me briefly outline the major features of each study, and then I will attempt to pull them together in terms of the major consistencies across studies. A more detailed description of the method of each study is also presented as part of Table 1.

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Insert Table 1 about here

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Ruble & Ross (1974)

This study attempted to replicate the affect findings of Parsons and Ruble and to examine if children would use the information in a predictable way in making attribution ratings. A major variation was that, instead of using Social norms, information about the ease or difficulty of the task was given directly. It was assumed that this change would simplify the process of making internal vs. external attributions for success or failure since it would eliminate one step of information processing (i.e., everyone succeeds - easy task; everyone fails = hard task). The subjects (4 - 5

years vs. 8 1/2 - 9 1/2 years) performed a series of trials of matching familiar figures given various combinations of task difficulty and outcome information. They then made self-ratings of affect, ability, effort, and task difficulty. In addition, observations of various nonverbal behaviors were made through a one-way mirror in order to determine if, for example, number of smiles was related to self-ratings of affect. The results showed very similar patterns for affect and ability: main effects for Outcome (Success>Failure); main effect for Age (young>Old); and Age X Outcome interactions. The pattern of these interactions was essentially identical to that discussed above for the Parsons and Ruble Study. The younger children made less use than the older children of the Outcome information in their self-rating, but only when they failed. However, information about the difficulty of the task was irrelevant to affect and ability ratings for both ages. Thus, the expected relationships derived from the Weiner model were not found for this study as they were for Parsons and Ruble.

Task difficulty information was relevant to effort and (not surprisingly) to task difficulty ratings, but mainly for the older children. These relationships were not simple, however; and thus a description of them will be delayed until the discussion of consistencies across the three studies. It is worth noting, though, that the younger children did not use the information about task difficulty given by the experimenter in making their

own task difficulty judgments. Either they forgot this information, or they preferred to make this judgment totally independently.

Finally, there were some clear consistencies between the self-ratings and the observational measures. Both the measures for number of smiles and general facial expressions showed significant main effects for Outcome and Outcome X Age Interaction. Again, the older children made greater differentiations between success and failure than the younger children. However, unlike the selfratings, these age differences seemed to appear in both success and failure conditions. Compared to the young children, the older group smiled more after success and less after failure.

Ruble & Loebl (1974)

This was the first of a set of two studies designed to focus on young children's use of social comparison information. First and second graders served as subjects because, for various reasons, this was expected to be the time in which a shift in the use of social comparison information should occur. These ages are approximately when the shift from preoperational to concrete operational stages, in a Piagetian sense, are expected. Also, for most students, these years represent their initiation into a competition and evaluation-oriented environment. Thus, a major change in the use of the information could be anticipated in spite of a relatively small difference in mean age (approximately 1 year).

This first study used a verbal-story methodology, in which the subjects rated hypothetical other children doing puzzles. In each story, the child actor either succeeded or failed and his/her peers either succeeded (high norms) or failed (low norms). The subjects made ratings on a five-point scale of the extent of task difficulty, ability, and effort present in each story. The results showed that, for the most part, second graders used the information in the expected way to make their judgments. For example, they made higher effort and ability ratings after success than after failure, and higher task difficulty ratings given low norms as opposed to high. The first graders, on the other hand, did not use the information in any kind of predictable way. Their mean ratings of ability and effort were nearly as high given failure as when given success, and they even had slightly higher mean task difficulty ratings when told that everyone else succeeded than when told that others had failed.

Loebl & Ruble (1975)

The specific causes of this fairly dramatic shift between first and second graders in the above study is not clear. However, before searching for some cognitive-developmental or social-learning explanation for the change, we wanted to make sure the results were not simply an artifact of the abstractness of the verbal-story methodology. Thus, Study 2 of this set replicated and extended the above study of involving subjects as actual participants in a social comparison situation.

First and second graders were tested in groups of four (two boys and two girls from the same grade). They performed two tasks, and after each, were given informatinn about their own performance (success/failure) and the performances of the other children (all succeeded/failed). The order of presenting this information was counterbalanced across subjects. They then gave self-ratings of affect, ability, effort, and difficulty of the task.

The pattern of results was very similar across the two tasks. In addition the correlations between the ratings across the two tasks were quite high (over .50) for affect, ability, and effort, and somewhat high (.30) for task difficulty. Thus this somewhat crude index of reliability of the dependent variables yielded positive results.

Since the pattern of results was similar for both tasks, only the results of the ratings for the first task will be described. There were main effects for success/failure Outcome for affect, ability, and task difficulty ratings, but not for effort. However, there was no Grade X Outcome interaction, unlike the previous studies, for any of these ratings. A significant main effect for Norms occurred only for task difficulty ratings by second graders. They rated the task as significantly harder when told that everyone else failed than when told the others succeeded, as would be predicted. The only other consistent and strong finding was an Outcome X Norm interaction for the ability ratings. For success,

subjects rated themselves as more able when others also succeeded (high norms); while for failure, they rated themselves as more able when others failed (low norms).

Consistent Findings Across The Studies

In spite of the numerous differences among the studies, certain patterns emerge fairly consistently. These patterns will be described in terms of four major areas: (1) Use of Outcome Information, (2) Use of Social Norm (or Task Difficulty) Information, (3) Relative impact of Outcome vs. Social Norm cues, and (4) Developmental Trends.

1. Use of Outcome information in self-evaluation. Children's perceptions about whether they succeeded or failed had a clear impact on their achievement-related judgments. There were strong and consistent main effects of Success/Failure Outcome for self-ratings of affect and ability, and for observations (e.g., smiling) of affect. There were moderately consistent effects of Outcome on task difficulty judgments; but for effort ratings, Outcome information had very little impact. It is possible that lack of differences for effort ratings may be due to a ceiling effect. Children seemed unwilling (perhaps for social desirability reasons) to say they did not try. It is also worth noting that in the situations in which the children actually perform a task, they can make independent judgments about task difficulty and effort (i.e., they have internal knowledge of how hard they tried, thus, it is not surprising that information provided by the experimenter should be less relevant to these ratings. Thus in sum, the

children in these studies said that they felt more positive affect, that they had higher ability, and (sometimes) that the task was easier after success than after failurs.

2. Use of Social Norm (or Task Difficulty) information in self-evaluation. If the children were using the social norm information in a logical and consistent way, there should be main effects for social norms. That is, there should be higher affect, ability, effort, and task difficulty ratings for low norms (everybody else failed) than for high norms. However, there were few main effects for norms; and when they were found, the effects were significant only for children in second grade or older. Norm information was used quite consistently by the older children for task difficulty judgments and occasionally for effort. The only other main effect for norms was for affect in the original Parsons and Ruble (1972) study.

There were several interactions of Norms with Outcome; however, these are somewhat difficult to interpret since the directions of the effects were not consistent. For example, children in the success condition in the Ruble and Ross study said they had higher effort when everyone else failed than when everyone else succeeded--a finding consistent with predictions. In contrast, children in the success condition in the Loebl and Ruble study said they had higher ability when everyone else succeeded than when everyone else failed--finding opposite to what would be

predicted. It may be that sometimes the children responded to the content of the norms, as intended, but sometimes they responded instead to the valence of the norms, creating a kind of halo effect. That is, the information that everyone else did well may create a kind of positive set that leads the children to respond positively on other ratings as well.

3. Relative impact of Outcome and Social Norm Cues in Self-Evaluation. Generally, Outcome information had a much greater impact than Social Norms on judgments related to self-evaluation. The main effects were consistently stronger and showed up more frequently for Outcome. However, there were differences in which kinds of ratings were affected by the two types of cues. Affect and ability ratings were, with few exceptions, only influenced by Outcome. Task difficulty was influenced about equally by Outcome and Social norms, with some variations across the studies. Effort was only weakly affected by either cue.

The relative strength of the outcome information may have been due, in part, to the order in which the cues were presented. For all except one of the studies discussed in this paper, outcome always followed social norm information. Results of recent investigations indicate that the order of presenting as few as two social cues has a clear impact on achievement judgments (Kun, Parsons, & Ruble, 1974) and on moral judgments (Feldman, Chereskin, Parsons, Rholes & Ruble, 1975). Young children appear to be more influenced by the second, more recent cue in making judgments.

However, order of cue presentation cannot explain the findings entirely, since the Loebl and Ruble study counterbalanced the order of presenting the cues. This study, like the others, found stronger and more consistent effects for Outcome than for Norms. Thus, it is likely that the difference is also due, in part, to the content of the information. Outcome may be more concrete, more salient, more familiar, etc. than social norms for young children.

4. Developmental Trends in the use of cues in self-evaluation. The results of all these studies show that the use of both Outcome and Social Norm cues becomes stronger and more predictable with age, even when the age difference was as small as one year (first vs. second graders). There were several Age X Outcome interactions, in which, with increasing age, failure resulted in less positive ratings. Why age differences should occur only for failure conditions is not completely clear. A simple explanation for these data based on a cognitive process such as decentering is difficult to formulate. It is possible that the relatively high scores after success reflect a ceiling effect. It is also possible that younger children are more defensive about failure than older children; though this explanation seems unlikely since the same Age X Outcome interaction occurred in the Ruble and Loebl study in which the subjects were not rating themselves. As mentioned earlier, this pattern is similar to a finding reported by Costanzo et al. (1973) for moral judgments, and a social-experiential explanation similar to theirs may be relevant here.

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That is, experiences with failure, and especially social disapproval and punishment associated with failure, probably increase substantially once children enter school.

Although there were few Age X Norm interactions, no main effects or interactions with Norms were significant for children six years or younger. Thus, in the situations represented in these studies, children under the age of seven were not using social norms at all in evaluative judgments. However, the effects of norms in these studies were also not strong or consistent for the older children's judgments.

Discussion

The results of these studies indicate clear developmental differences in the use of achievement-related information in making evaluative judgments. In addition, social norm information is not used predictably even by second and third graders though outcome is. Thus, in answer to a basic question underlying these studies, young children are not using social norm and outcome information consistently in their judgments according to predictions derived from the Weiner et al. model--at least not in these laboratory situations. I do not, however, want to imply that they cannot use this information.

Why do we get these developmental changes? A number of possibilities have already been mentioned. First, there are a series of possible cognitive or information-processing explanations. For example, Piaget suggests that it is not until the stage of concrete operations (about 7 years) that children decenter and can integrate information in making judgments.

However, this does not seem to be a likely explanation for the findings, since similar work with moral judgments (Costanzo et al., 1973) and with achievement judgments (Kun et al., 1974) indicate that very young children do integrate multiple cues in making ratings of the kind used in the present studies.

Perhaps the source of the developmental changes lies at a more basic information-processing level, such as attention to or memory of the information. Intuitively, it is very difficult to believe that young children are not able to compare their performance with others and then use the information gained from this comparison in evaluating themselves. It seems more likely that somehow our experimental situations cloud the processing of this information through, for example, inducing them to attend to more salient extraneous information. It is also possible that the source of the problem is at the response level--the way the question is asked or the rating scales employed. Ruling out these various task- or situation-related explanations could be an interesting problem in itself.

A second possible source of developmental differences is social-experiential in nature. As mentioned earlier, children probably become more familiar with making evaluative judgments, with success and failure outcomes, and with comparing their performance with others, once they enter school. Thus, a large change in the use of this kind of information in the early grades of school, as found in these studies, would be expected.

The above explanations are of necessity speculative; there has been little research in this area specifically oriented toward understanding underlying developmental processes. The further explanation of the sources of developmental changes in judgmental processes would be facilitated by a theoretical model of dimensions along which relevant social cues vary. This kind of model would allow researchers working in different content areas of social judgments (e.g., moral evaluation, perception of kindness, achievement-related evaluation) to see the overlap in their findings--an overlap which must surely be considerable. For starters, the following dimensions of social cues might be considered:

1. Valence--positive, negative, or neutral
2. Concreteness
3. Location--person or environment
4. Familiarity
5. Quantity--the total number of cues presented
6. Order--the order of presenting the cues

If we can become more explicit about what the cues presented mean to the children (e.g., Is success more familiar than failure; Is Outcome more concrete than social norm information), then we should be able to make more rapid progress toward predicting and interpreting the changes with age that occur.

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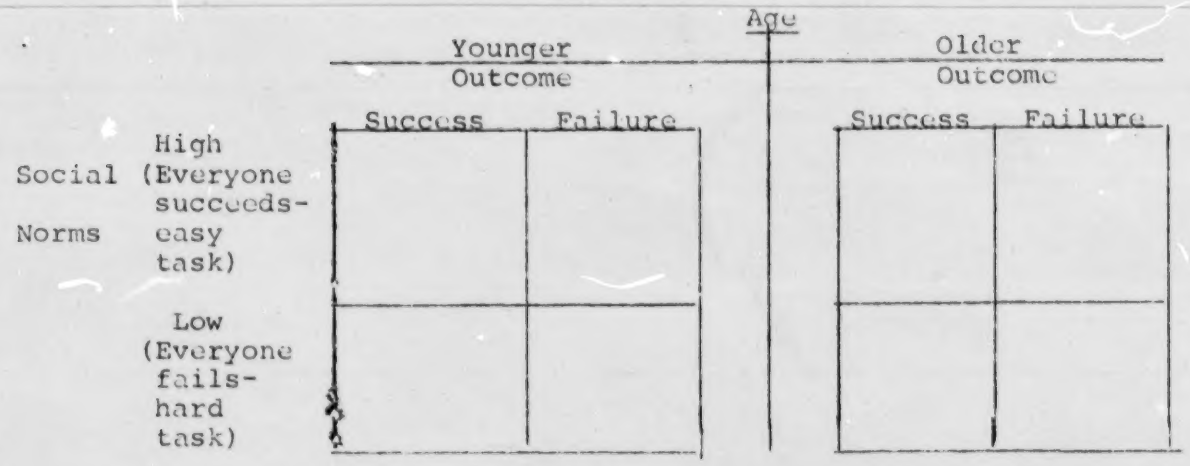
Table 1

Basic Design of the Judgment Studies



Some distinctive features of each study:

Ruble & Ross (1974)

1. Task difficulty information is given instead of social norms
2. Outcome is a between S factor; task difficulty is within.

Ruble & Loebl (1974)

1. The study is a complete within S design.
2. Ss rated hypothetical other children instead of selves.

Loebl & Ruble (1975)

1. The study is a complete between S design.
2. Order of presenting the cues was counterbalanced.

Ruble & Ross (1974)
Method

Subjects

The subjects were 72 children recruited from Princeton and surrounding areas by means of an ad which was run in the local newspapers for a week. Each subject received two dollars for their participation. There were 18 boys and 18 girls in each of two age levels: (1) 4-0 to 5-11 years, and (2) 7-6 to 9-5 years. Testing was done during July, 1974.

Procedure

The subjects were tested individually in one twenty-minute session. They were first given practice with the rating scales. The scale for affect consisted of a large cardboard face with a moveable mouth also used by Parsons & Ruble (1972) which the children could manipulate up or down to indicate their affective reaction to their performances. The scale for ability effort, and task difficulty ratings consisted of nine circles of increasing size. The subjects were randomly assigned to experimental (n=48) and control (n= 24) groups and to success (n=36) and failure (n=36) conditions.

The subjects were told that they would be performing a series of trials on a matching familiar figures task and general instructions were given. Then all subjects were given two practice trials after which they were given success or failure feedback depending on condition but no other information. For the next four trials, the experimental subjects received task difficulty information in addition to success/failure feedback; while the control subjects received only the outcome information. Half of the experimental subjects were told these tasks were very hard before the first set of two trials and that these tasks were very easy before the second set of two trials. The other half of the experimental subjects received the task difficulty information in the reverse order.

After each set of two trials, the subjects were reminded of the task difficulty information, were given outcome feedback, and were then asked to make the self-evaluative ratings. In addition, subjects in the failure condition were given two additional trials, which were supposedly very hard and on which they were told they had done very well.

While one experimenter was testing the subject, a second experimenter observed the subject through a one-way mirror and rated several non-verbal behaviors. These measures included number of smiles, number of eye contacts, general negative to positive facial expression, and general relaxation.

Ruble & Loebl (1974)
Method

Subjects

The subjects were 18 first and second graders from a public elementary school in central New Jersey. There were five boys and four girls in each grade. Testing was done during late March and early April in 1974.

Procedure

The children were tested individually in one ten-minute session. First, they were given practice using the five-point rating scale (five circles of increasing area). All children could easily rate three stick figures according to height along the scale. After some general instructions, the subjects were then told four stories about other children doing puzzles. In each story, the child actor either succeeded or failed and his /her peers either succeeded (high norms) or failed (low norms). Each subject received each of the four combinations of information and made ratings on the five-point scale of the extent of task difficulty, ability, and effort present in each story.

An example of a high norm, success story is as follows:

> The teacher gives Lisa a puzzle to work on. The teacher says that almost everyone else in the class finished the puzzle when they tried it. Lisa finishes the puzzle.

Each story had a male and a female version, and each subject received two male and two female stories. The order of presenting the stories was counterbalanced.

Loebl & Ruble (1975)
Method

Subjects

The subjects were 104 first and second graders from a public school in central New Jersey. There were 26 boys and 26 girls in each grade. Testing was done during February, 1975.

Procedure

Subjects were tested at school in groups of four (2 boys and 2 girls from the same grade) in one thirty-minute session. They were randomly assigned to one of six outcome (success, failure) x social norm (high, low, control) conditions. The four children in each group were seated at separate desks, some distance apart. They were first given practice with the rating scales. The scale for affect was the cardboard face with the moveable mouth, as described in Ruble and Ross. The scales for ability, effort, and task difficulty consisted of five circles of increasing area; and the question each scale represented was illustrated with a cartoon (e.g., a person struggling to lift barbells represented effort).

Next the children were given the first of two experimental games, a picture arrangement task similar to that in the WAIS. It consisted of six cartoons that could be arranged to form a story. The children were told there is only one way to arrange the cards. They were also told they would all be working on the same type of task, but the instructions minimized competition.

After all children were finished, the experimenter (E) looked at each child's set of cards and gave feedback individually. The E spoke in a low voice (and music was playing in the background) so that the other children could not hear. According to condition, each child was told that he/she succeeded or failed and that the other children succeeded , failed (or for the control no information was given). The order of presenting the outcome and social norm information was counterbalanced.

Then E asked the judgment questions. For example, for ability E asked, "How good do you think you are at this kind of game? Are you a little bit good, pretty good, or very good? Mark the circle that shows me how good you are at this." The order of presenting the judgment questions was counterbalanced across subjects. Finally, E asked two memory check questions to make sure the children remembered the outcome and social norm information they were given.

Next, the second task, a hidden-figures game was described. Children were asked to find as many faces as they could in a picture of a forest. The rest of the procedure was identical to that described above for the story cards game. Since this second task was mainly intended as a reliability check, the social Norm x Outcome condition remained the same as for task 1.

FIGURE 1

Level of Affect as a Function of Outcome, Social Norms, and Age (Parsons & Ruble)